AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Cancel claims 1-27

28. (New) An osteogenic implant comprising an implant made of titanium metal, having a surface covered with a polypeptide at a rate of 5 to 70%, preferably 8% to 20%, based on a maximum coverage of the metal surface with a monomolecular layer, wherein the polypeptide is selected from the group consisting of one or more of transforming growth factors (TGF) and systemic hormones.

29. (New) The implant of claim 28, having an at least partially roughened surface, which surface is at least partially covered, in the hydroxylated state, with a polypeptide selected from the group consisting of one or more of transforming growth factors (TGF) and systemic hormones.

30. (New) The implant of claim 29, having a macro-roughness, and a micro-roughness superposed on the macro-roughness, said micro-roughness being produced by chemical etching of the surface and/or by means of electrolytic treatment, preferably by etching with an inorganic acid or a mixture of inorganic acids, preferably with hydrofluoric acid, hydrochloric acid, sulfuric acid, nitric acid or a mixture of such acids, or else by treating the surface with hydrochloric acid, hydrogen peroxide and water in a ratio of about 1:1:5 by weight.

31. (New) The implant of claim 28, wherein the transforming growth factor (TGF) is selected from the group consisting of one or more of (i) transforming growth factors beta (TGF-β) and (ii) bone morphogenic proteins (BMP).

32. (New) The implant of claim 31, wherein the transforming growth factor beta (TGF-β) is selected from the group consisting of one or more of TGF-β1, TGF-β2, TGF-β3, TGF-β4 and TGF-β5.

33. (New) The implant of claim 31, wherein the TGF is a bone morphogenic protein (BMP) selected from the group consisting of one or more of BMP-2 (BMP-2a), BMP-3, BMP-4 (BMP-2b), BMP-5, BMP-6, BMP-7 (OP-1), BMP-8 (OP-2), BMP-9, BMP-10, BMP-11, BMP-12, and BMP-13.

34. (New) The implant of claim 31, wherein the TGF is a bone morphogenic protein (BMP) selected from the group consisting of one or more of osteonectin, bone sialoprotein (BSP), osteopontin, osteocalcin, osteostatin, osteogenin, and osteo growth peptides (OGP).

35. (New) The implant of claim 34, wherein the osteocalcin has a formula: H-Gly-Ala-Pro-Val-Pro-Tyr-Pro-Asp-Pro-Leu-Glu-Pro-Arg-OH.

36. (New) The implant of claim 34, wherein the osteocalcin has a formula: H-Gly-Phe-Gln-Glu-Ala-Tyr-Arg-Arg-Phe-Tyr-Gly-Pro-Val-OH.

37. (New) The implant of claim 34, wherein the osteocalcin has a formula: H-Tyr-Gln-Glu-Ala-Phe-Arg-Arg-Phe-Gly-Pro-Val-OH.

38. (New) The implant of claim 34, wherein the osteocalcin has a formula: H-Tyr-Leu-Tyr-Gln-Trp-Leu-Gly-Ala-Pro-Val-Pro-Tyr-Pro-Asp-Pro-Leu-Gla-Pro-Arg-Arg-Gla-Val-Cys-Gla-Leu-Asn-Pro-Asp-Cys-Asp-Glu-Leu-Ala-Asp-His-Ile-Gly-Phe-Gln-Gln-Ala-Tyr-Arg-Arg-Phe-Tyr-Gly-Pro-Val-OH.

39. (New) The implant of claim 34, wherein the osteogenic growth peptide (OGP) has a formula: H-Ala-Leu-Lys-Arg-Gln-Gly-Arg-Thr-Leu-Tyr-Gly-Phe-Gly-Gly-OH.

40. (New) The implant of claim 28, wherein the polypeptide contains at least one residue of an amino acid with a heterocyclic ring, preferably the residue of proline (Pro), hydroxyproline (Hypro), tryptophan (Try) or histidine (His).

41. (New) The implant of claim 28, wherein the systemic hormone comprises one or more of 1,25-$(OH)_2D_3$, 1α,1,25$(OH)_2D_3$ and 24,25-$(OH)_2D_3$.

42. (New) The implant of claim 28, wherein the implant, or at least its covered surface, is enclosed in a gas-tight and liquid-tight envelope which is filled with a gas which is inert for the implant surface, preferably with nitrogen, oxygen or a noble gas and/or at least partially with pure water, which optionally contains additives.

43. (New) The implant of claim 42, wherein the pure water in the envelope contains a polypeptide comprising one or more of a transforming growth factor (TGF) and a systemic hormone, preferably the same polypeptide with which the implant surface is covered.

44. (New) The implant of claim 43, wherein the pure water contains the polypeptide in a concentration in the range from 0.01 µmol/l to 100 µmol/l, preferably 0.1 µmol/l to 10 µmol/l, and preferably in a concentration of about 1 µmol/l.

45. (New) The implant of claim 44, wherein the pure water contains inorganic salts in the form of monovalent alkali metal cations, preferably Na^+ or K^+, or a mixture of Na^+ and K^+, with anions and/or divalent cations in the form of water-soluble inorganic

salts, preferably Mg^{+2}, Ca^{+2}, Sr^{+2} and/or Mn^{+2} in the form of the chlorides, chlorates, nitrates, phosphates and/or phosphonates.

46. (New) The implant of claim 42, wherein the pure water contains inorganic salts in a total amount of said cations and anions in each case in a range from 50 mEq/l to 250 mEq/l, preferably 100 mEq/l to 200 mEq/l, and preferably in an amount of about 150 mEq/l.

47. (New) A process for producing an implant of claim 28, wherein the implant surface is mechanically roughened by being shotpeened or sandblasted and/or roughened by use of plasma technology, wherein subsequently

(i) the surface which has been roughened mechanically or by plasma technology is treated with an electrolytic or chemical etching process until a hydroxylated surface has been produced, preferably with an inorganic acid or a mixture of inorganic acids, preferably with hydrofluoric acid, hydrochloric acid, sulfuric acid, nitric acid, or a mixture of such acids, or hydrogen chloride, hydrogen peroxide and water in a ratio of about 1:1:5 by weight; and

(iii) the surface is at least partially covered with a polypeptide comprising one or more of an osteogenic growth peptide (OGP), a transforming growth factor (TGF) and an osteocalcin.

48. (New) The process of claim 47, wherein the polypeptide is brought into contact with the hydroxylated metal surface in aqueous solution at a concentration of at least 10 µmol/l (micromole per liter).

49. (New) The implant produced by the process of claim 47.

50. (New) The implant of claim 28, wherein it is a dental implant.

51. (New) A process for introducing an osteogenic dental implant of at least partially cylindrical shape into a cavity of a jaw bone, wherein the bone surface, in the area of the cavity, is brought at least partially into contact with a polypeptide selected from the group consisting of one or more of transforming growth factors (TGF) and systemic hormones, wherein the metal surface is covered with the polypeptide at a rate of 5 to 70%, preferably 8% to 20%, based on a maximum coverage of the metal surface with a monomolecular layer.